

THE VALUE OF DEAD WOOD TO WILDLIFE AND AGRICULTURE

Land for Wildlife Note No. 5

November 1999



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Those dead trees and branches in paddocks and amongst bushland could have more value than many landholders realise. The temptation to turn them into firewood has led to their loss from many areas of South-east Queensland. However, it is worth contemplating their considerable range of values before removing dead wood from a property.

The Value of Dead Wood

Dead Wood provides:

- an excellent roost site for bats. Bats are insect eaters and look for food over paddocks as well as amongst trees that form the basis of woodlots and shelterbelts and which contribute to agricultural production. Insectivorous bats consume many agricultural pest species. Studies of the Lesser Long-eared Bat show that greater than 75% of roosting sites occur within dead trees, or dead sections of living trees. This may be related to the different insulating qualities of dead wood. A dead tree or branch can thus indirectly contribute to natural pest control and, consequently, reduce reliance on expensive pesticides.
- perching sites for birds of prey, and other species, which pounce on ground-dwelling prey, such as robins and Cuckoo Shrikes, which help to keep agricultural pest species in check. At night, owls may be found using dead trees or branches, whether in a forest or more open situation, as observation points for hunting.
- sources of the largest hollows that are used by black cockatoos, large owls, sugar gliders and other wildlife species. Large old trees have features that young trees do not, and dead trees are often the last representatives, in many areas, of the largest trees.
- important sources of insects for insect-eating birds. Decaying wood and flaking bark are particularly rich sites for insects and birds take advantage of this. For example, sittellas spend a third of their time looking for prey on dead branches rather than live ones. This sets them apart from tree-creepers that prefer to feed on living surfaces. More insect-eating birds around a property helps keep insect numbers low, reduces reliance on potentially dangerous chemical controls, and assists with protecting the health of bushland used for shade, shelter or to prevent land degradation.
- nest sites. Some bird species place their nest solely or primarily on dead branches. For example, sittellas are obligate dead wood nesters and require vertical dead branches for breeding. Flycatchers and Cuckoo Shrikes nest most often on horizontal dead branches. Dead branches are often associated with hollows and hollow development. Mammals, (including bats), birds, reptiles, amphibians and invertebrates use hollows. Dead branches may be habitat in themselves for a number of invertebrate species. Twigs are an important nesting material being used by a wide variety of species, including

eagles. Cuckoos use dead branches for singing, an important part of courtship prior to breeding.

- a source of lichen and cobweb that is used by birds in nest construction. Fantails, cuckoo shrikes, robins, sittellas, thornbills, warblers, and many honeyeaters use spider web either as an agent to attach the nest or to bind the other nest materials. Lichens and cobweb are most abundant on dead wood.
- the immediate source of soil nutrients. The decay of dead plant material is the major source of soil nutrients. The return of nutrients to the soil is essential if it is to remain productive. Removal of dead plant material from a bushland remnant is like eroding the capital on a long-term investment. Eventually, the bush will be depleted of nutrients.
- supplies of logs, branches and twigs that provide important habitat for ground-dwelling wildlife such as Bush Stone-curlew, nightjars, reptiles and small native mammals, as well as in-stream habitat for fish and invertebrates. For example, the Mary River Cod (*Maccullochella peeli mariensis*), a native species, that spawns in hollow logs. Studies have shown that declining numbers of this species are directly related to the removal of dead wood from streams and the removal of riparian vegetation.
- cache sites for butcherbirds. Butcherbirds wedge food in a tree fork or on a spike and tear their prey apart, their feet being too small to hold it down in the manner of a hawk. The butcherbird's name is derived from this habit. Food includes insects, mice, reptiles, birds (including nestlings), and plant material.



Dead trees and branches on private land are very important resources for wildlife. They provide habitat for insect-eating species and that's good for agriculture as well as nature conservation.

Biologists call our big old trees 'veterans' because they've been around a long time and developed a unique character that is particularly valuable for wildlife. When they die, many of these values are retained. A dead tree remains standing for up to 50 years before falling where it continues to supply habitat for ground-dwelling species of small mammal and reptiles, and continues to rot, supplying food to animals inhabiting the soil and plants.

Are dead trees good firewood sources?

As firewood, dead trees have the advantage of being immediately useable. However, there are many more disadvantages to sourcing dead trees as firewood. They are often hollow or rotting, making the effort of felling worthless and adding to the danger. Dead wood is extremely hard to cut and can quickly blunt a chain-saw blade or axe. Felling large dead trees for firewood is an unsustainable activity, as it takes hundreds of years for them to replace naturally. Falling large dead trees for firewood is an unsustainable activity on most properties.

The solution to personal firewood supply

The solution to firewood supply for your own use is to establish a woodlot so that old dead trees can be retained for their wildlife and other values. The advantages of growing trees specifically as firewood are numerous. The trees can be harvested when of an appropriate size for easy handling (say 20cm diameter), the wood is cut green so that it is easy on your chain saw, when drying it often splits (depending on species) allowing for straightforward axe work, and there is little risk of your effort being wasted on a hollow plant. What's more natural areas can be protected.

If you don't have a woodlot, and need a source of wood whilst one develops, then living trees of small diameter are the best choice for firewood. They have the advantages described above and, most importantly, they are easier to replace than big old dead trees, which may be hundreds of years old.

Cutting green timber means that you will need to plan ahead one to two years to allow the wood to dry out. The shrinkage caused by drying the wood is what leads to splitting and helps with axe work. Planning ahead also has the advantage of ensuring that wood will be available in future years.

Alternative sources of firewood include recycled timber from fencing, tip sites, industry refuse, timber discarded by tree loppers, and sawmill off-cuts. Solar heating can reduce the need for timber.

Thus, the decisions of private landholders about long-term supply of firewood are important in determining the quality of habitat available to wildlife on private land.

What about the supply for commercial purposes?

Commercial firewood suppliers may be interested in removing large dead trees because they don't need to wait for the wood to dry before being sold. For the landholder, this means getting a once only cash return for irreplaceable trees. If you are interested in commercial growing of timber, the establishment of a farm forestry woodlot may be a viable option. Information

about farm forestry initiatives in south east Queensland can be obtained by contacting the Department of Primary Industries, Greening Australia or your local *Land for Wildlife* extension officer.

Safety Issues

Dead trees and branches can pose a risk to public safety, as can live trees and branches. The risk of tree or branch fall increases in extreme weather conditions, such as during storms.

Where pedestrian traffic is high it may be wise to reduce the risk to people by removal of the tree or branch or by using suitable restraints. In other areas of the property, where the main aim is to retain wildlife habitat, suitable safety warnings, that apply to any venture in bushland, should be given.

A tidy property?

It is important to recognise that a well managed property may very well have a healthy ground layer of logs, branches, twigs, leaves and shrubs in appropriate areas. The practice of 'tidying up' a farm by removing logs and branches, may still be appropriate in some areas, such as where they interfere with agricultural machinery or in fire breaks. In this case, a property management plan incorporating these issues may be required.

Acknowledgment:

Text and selected illustrations relating to this technical note was sourced from the Department of Natural Resources and Environment, Victoria: Land for Wildlife Program.

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See Land for Wildlife South-east Queensland Note No. 1 'Reference List' for further reading and references